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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,427

09/26/2003

Naokatsu Ikegami

OKI 383

5808

23995

7590

06/17/2004

RABIN & Berdo, PC
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EXAMINER

HANLEY, JOHN C

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,427

Applicant(s)

IKEGAMI ET AL.

Examiner

John C Hanley

Art Unit

2856

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence addr ss --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/26/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/17/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 2856

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The labeling of the mounting board and the sensor chip is reversed in the detailed description.

Appropriate correction is required.

Claim Objections

2. Claim 1 is objected to because of the following informalities: "beam" in line 4 is not consistent with "beams" in line 7. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(a) as being anticipated by MacDonald et al (US-6170332). MacDonald et al, fig. 2, shows an accelerometer having a mounting board represented by the second silicon wafer, and a sensor chip, represented by the first silicon wafer, mounted on the mounting board. The sensor chip is formed of a weight, beams and a frame, where the weight is surrounded by the frame and joined to the frame by the beams, and supported so as to separate from the mounting board. In column 4,

Art Unit: 2856

lines 45+, the second wafer is said to provided overrange stops (not shown) to prevent the mass from moving too far and damaging itself.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald et al as applied to claim 1 above, and further in view of Pinter et al (US-6360605) or Fujii et al (US-5313836). MacDonald et al lacks a teaching of stops mounted on the weight. Pinter et al shows that stops for an accelerometer weight can be placed on the mass and the stationary structure. Similarly, Fujii et al shows a stopper 4' in Fig. 9 that is disposed on a surface of the weight facing the mounting board. It would have been obvious to one skilled in the art at the time of applicant's invention to modify MacDonald et al so its stop(s) are mounted on the mass, as taught by Pinter et al or Fujii et al, to reduce sticking.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald et al Fujii et al as applied to claim 3 above, either alone or further in view of Shimada et al (US-5429736). Fujii et al is interpreted as having truncated conical stops broadly readable on the claim language. However, Shimada et al, figures 10-11, shows a conical shaped stop to limit overrange movement of an accelerometer mass. Thus, it would have been further obvious to one skilled in the art at the time of applicant's invention to

Art Unit: 2856

modify MacDonald et al and Fujii et al so that their stops are conically shaped, as taught in Shimada et al, to minimize the contact area of the stop(s) to prevent sticking.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ishio (US-6694814), implying that stop projections can be placed on the stationary or moving electrode of a sensor, states that it is preferable to form the projections on the stationary electrodes to avoid a dynamic unbalance of the movable electrodes which may occur when some of the projections formed on the movable electrodes are destroyed by an excessive impact. Seippler (US-4825696), Reimann (US-4987781) and Lefort et al (US-6311556) show conical stops. Zabler et al shows stops on the moving mass and the stationary mass.

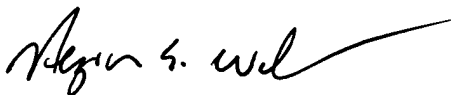
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C Hanley whose telephone number is 571-272-2195. The examiner can normally be reached on M-F 9AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCH



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